



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,165	08/08/2003	Marc Tremblay	SUN-P9324-SPL	2937
57960	7590	10/01/2007		
SUN MICROSYSTEMS INC. C/O PARK, VAUGHAN & FLEMING LLP 2820 FIFTH STREET DAVIS, CA 95618-7759			EXAMINER	
			ZHE, MENG YAO	
			ART UNIT	PAPER NUMBER
			2195	
			MAIL DATE	DELIVERY MODE
			10/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/637,165	TREMBLAY ET AL.
	Examiner	Art Unit
	MengYao Zhe	2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 July 2007.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. Claims 1-20 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7, 9-16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Rajwar et al. Patent No. 7,120,762, 10/10/2006 (hereafter Rajwar).

4. Rajwar was cited in the last office action.

5. As per claims 1, 10, and 19, Rajwar teaches the invention as claimed including a method for executing a commit instruction to facilitate transactional execution on a processor, comprising:

encountering the commit instruction during execution of a program, wherein the commit instruction marks the end of a block of instructions to be executed

transactionally; (*Column 3, lines 42-45; Column 7, lines 9-12; the end instruction marks the end of the critical section*)

and upon encountering the commit instruction, successfully completing transactional execution of the block of instructions preceding the commit instruction; (*Abstract; Column 7, lines 26-30; Column 9, lines 20-25, lines 45-50*)

wherein changes made during the transactional execution are not committed to the architectural state of the processor until the transactional execution successfully completes. (*Abstract; Column 7, lines 29-33; Column 9, lines 45-50*)

6. As per claims 2, 11, 20, Rajwar teaches wherein successfully completing the transactional execution involves atomically committing changes made during the transactional execution; and resuming normal non-transactional execution. (*Column 3, lines 15-17; Column 5, lines 57-60; Column 9, lines 45-50*)

7. As per claims 3, 12, Rajwar teaches wherein atomically committing changes made during the transactional execution involves: treating store-marked cache lines as locked, thereby causing other processes to wait to access the store-marked cache lines; (*Column 5, lines 30-40, Column 6, lines 55-65, and Column 7, lines 1-4*)

clearing load marks from cache lines; committing store buffer entries generated during transactional execution to memory, wherein committing each store buffer entry involves unmarking, and thereby unlocking, a corresponding store-marked cache line; (*Column 8, lines 40-50; Column 8, lines 53- 60*)

and committing register file changes made during transactional execution.
(*Column 5, lines 57-65*)

8. As per claims 4, 13, Rajwar teaches

wherein if an interfering data access from another process is encountered during the transactional execution and prior to encountering the commit instruction, the method further comprises: discarding changes made during the transactional execution; and attempting to re-execute the block of instructions. (*Column 8, lines 50-65*)

9. As per claims 5, 14, Rajwar teaches

wherein for a variation of the commit instruction, successfully completing the transactional execution involves: atomically committing changes made during the transactional execution; and commencing transactional execution of the block of instructions following the commit instruction. (*Abstract and Column 9, lines 45-50, Column 3, line 15-17*)

10. As per claims 6, 15, Rajwar teaches

wherein potentially interfering data accesses from other processes are allowed to proceed during the transactional execution of the block of instructions. (*Column 2, lines 47-50*)

11. As per claims 7, 16, Rajwar teaches wherein the block of instructions to be executed transactionally comprises a critical section (*Column 2, lines 47-50*)

12. As per claims 9, 18, Rajwar teaches wherein the commit instruction is defined in a platform-independent programming language (*Column 10, lines 8-15*)

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rajwar et al. Patent No. 7,120,762, 10/10/2006, (hereafter Rajwar), in view of Hecht et al, Pub. No. US 2003/0064808 (hereafter Hecht).

15. Hecht was cited in the last office action.

16. As per claims 8, 17, Rajwar teaches that the invention as he disclosed may be used on different computer architecture, meaning that they can be platform independent
(Column 10, lines 8-15)

Rajwar does not teach the commit instruction being platform dependent.

However, Hecht teaches a

converter program that converts platform independent programs into platform dependent programs for the purpose of running the program on a specific type of machine
(Paragraph 14)

It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the invention of Rajwar with

Converting the platform independent instruction to platform dependent instruction,

as taught by Hecht, because it allows the program to run on a specific type of machine.

Response to Arguments

17. Applicant's argument filed on 7/19/2007 regarding claims 1-20 have been fully considered but are not persuasive.
18. In the remark applicant argued in substance that:
 - i) The teachings of Rajwar fail to disclose a commit instruction that marks the end of a block of instructions to be executed transactionally. Therefore, Rajwar fails to teach encountering a commit instruction.
19. The Examiner respectfully disagree with the applicant
As to point i), Rajwar discloses an invention that speculatively executes a critical section that has distinct beginning and end instructions. Because the end instruction marks the end of the critical section, the Examiner has equated the end instruction to the commit instruction (Column 7, lines 10-13; lines 26-33). Furthermore, Rajwar discloses that upon encountering the end instruction, if the speculation is correct, Rajwar's invention successfully commits to and completes all the critical section before and up to the end instruction (Fig 5, step 84; Column 9, lines 20-25I lines 46-49; Column 10, claim 4). Therefore, based on the definition that the commit instruction marks the end of a block of instructions, a commit instruction is indeed present in Rajwar's invention.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MengYao Zhe whose telephone number is 571-272-6946. The examiner can normally be reached on Monday Through Friday, 10:00 - 8:00 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached at 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Meng-Yao Zhe
MENG-YAO ZHE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100